To this must, however, be added the completion of the Settlement of Murbád and the Demarcation and Settlement of Sháhápur. Mr. Orr, however, adds: "I have good hopes that the whole work of the district will be complete by the end of 1896."

15. In the Mándvi Táluka of Surat the sanctioned demarcation has been found to be so faulty that it has been ordered in Government Resolution No. 6702 of 2nd September 1895, that it be revised. It is confidently expected, however, that the work will be completed during the coming season.

16. In the rest of Surat and in the Panch Mahál settlement is complete.

### (iii).—DEMARCATION.

17. The following statement shows the clearance of boundary lines and the erection of forest boundary marks effected during the year:—

| No. | Division. | Length of Boundary demarcated. | Number of Cairns erected. | | Amount spent. | Rate per mile. | Remarks. |
|---|---|---|---|---|---|---|---|
| | | | Large. | Small. | | | |
| | | | | | Rs. a. p. | Rs. | |
| 1 | East Thána ... | 17 | ... | 290 | 195 13 9 | ... | |
| 2 | West Thána ... | 34½ | 114 | 4 | 68 3 0 | .. | |
| 3 | Surat ... | 30½ | 210 | 187 | 811 7 3 | ... | |
| 4 | Panch Mahál ... | 23 | ... | 55 | 2,282 1 6 | ... | |
| | Total ... | 105 | 324 | 536 | 3,357 9 6 | 11½ | |
| | Total of 1893-94 ... | 139½ | 752 | 313 | 3,730 0 0 | 26¾ | |

### (iv).—SURVEYS.

18. The following statement furnished by the Superintendent of Forest Survey Work and its cost during *survey year* 1894-95 in this Circle:—

| Description of Survey. | Scale. | District. | Area in Square miles. | Total Cost for Survey year. | Cost rate. Square mile. | Remarks. |
|---|---|---|---|---|---|---|
| | | | | Rs. a. p. | Rs. a. p. | |
| Triangulation ... | 8″ mile. | West Thána. | 205 | 970 4 5 | 6 11 3 | Máhim Táluka. |
| Traversing ... | ... | ..... | 200 | 970 4 5 | 4 13 7 | Máhim Táluka. |
| Detail Survey ... | ... | East Thána... | 5,557 | 9,462 1 9 | 170 7 4 | Váda Táluka. |
| Total ... | ... | ..... | ... | 11,402 10 7 | ... | |

19. The actual cost debited to the Northern Circle during the *forest year* was Rs. 11,219-2-7.

## CHAPTER II.

## MANAGEMENT OF STATE FORESTS.

### I.—REGULATION AND MANAGEMENT.

#### (*a*).—Working Plans and their Control.

20. The Working Plans Division was in charge of Mr. G. P. Millett, Deputy Conservator of Forests, 4th Grade, during practically the whole year.

21. During November, December, and part of January Mr. Millett was employed in inspecting in detail the reserves in the Godhra Range of the Panch Mahâls division. As a result of this inspection a draft scheme of working was drawn up by him which was submitted to the Divisional Forest Officer and Revenue officers; on receipt of any criticisms or suggestions they may have to offer, the details of the Working Plan will be elaborated and the scheme submitted to Government for sanction.

22. The Working Plan of the Bhiwndi Range, Thâna Division, was formally sanctioned by Government and a similar Working Plan (comprising the Váda, Bassein and Máhim Ranges) was prepared by Mr. Millett and is under consideration by the Divisional Forest officers and Revenue officers.

23. On completion of the inspection of the Godhra forests mentioned above, Mr. Millett moved to Thâna and was engaged in supervising and pushing on the work of marking the Thâna coupes on the ground. Up to the commencement of the year under report 150 coupes had been marked out in advance (*i. e.*, in advance of the actual coupes of the year) to which have been added 255 during the past year. This, though so far satisfactory, is still a very slow rate when it is remembered that nearly 9,000 such coupes remain to be demarcated on the ground. I am therefore glad to be able to record that Colonel Hobday, the Superintendent, Forest Survey, has most courteously consented to have this work done *pari passu* with the survey, so that it may confidently be hoped that the work will now shortly be completed.

24. The general scheme of working of the Thâna forests was, as Government is aware, adopted rather hurriedy and without the usual preliminary stock-taking and calculation of rate of growth, &c. For these data the Forest officers responsible for the scheme had to rely on the personal working knowledge of the forests and their contents of themselves and other officers who had been in charge. It is most gratifying therefore to see how the selection of a rotation of 40 years is supported by the diagram published at page 71 in last year's administration report of the Southern Circle. Moreover, the result of the experiments in coppice growth in the Kolâba forests (for these forests are very similar in their contents and growth to the majority of the Thâna forests) seems to show that the working of these Thâna forests for large timber, as was advocated, I believe, by the Inspector General of Forests when he visited Bombay, would have been impossible without a preparatory treatment very much on the lines of that now being followed.

25. The following statement shows the extent to which the Thâna Working Plans have been marked out on the ground:—

| Name of Range. | Number of Blocks. | Total Number of Coupes. | Number of Coupes marked out. | Number of Coupes exploited. | Number of Coupes to be worked in 1895-96. | Number of Coupes marked for future exploitation. | Number of Blocks in which Coupes for future exploitation are laid out. | Number of Coupes yet to be marked out. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| *East Thâna Division.* | | | | | | | | | |
| Bhiwndi ... ... ... | 20 | 800 | 243 | 158 | 20 | 65 | 20 | 557 | |
| Kalyán ... ... ... | 16 | 640 | 135 | 119 | 16 | ... | ... | 505 | |
| Murbád ... ... ... | 20 | 800 | 119 | 104 | 15 | ... | ... | 681 | |
| Shâhâpur and Khardi ... | 53 | 2,120 | 308 | 259 | 49 | ... | ... | 1,812 | |
| Mokhâda ... ... ... | 12 | 480 | 71 | 60 | 11 | ... | ... | 409 | |
| Váda ... ... ... | 34 | 1,360 | 249 | 180 | 34 | 35 | 9 | 1,111 | |
| *West Thâna Division.* | | | | | | | | | |
| Sálsette ... ... ... | 11 | 440 | 74 | 63 | 11 | ... | ... | 366 | |
| Bassein ... ... ... | 23 | 920 | 283 | 189 | 23 | 71 | 16 | 637 | |
| Máhim ... ... ... | 35 | 1,400 | 523 | 254 | 35 | 234 | 34 | 877 | |
| Dáhánu ... ... ... | 42 | 1,680 | 337 | 295 | 42 | ... | ... | 1,343 | |
| Umbargaon ... ... | 19 | 760 | 143 | 124 | 19 | ... | ... | 617 | |
| Total ... | 285 | 11,400 | 2,485 | 1,805 | 275 | 405 | 79 | 8,915 | |

26. The following statement shows the employment of time of the Working Plan surveyors:—

| Percentage of time employed in | 1893-94. | 1894-95. |
|---|---|---|
| Working days (field and office work) ... | 64 | 61 |
| Sundays, holidays and leave .. | 23 | 21·4 |
| Travelling ... ... ... | 10 | 10·1 |
| Illness and delays ... ... | 3 | 7·5 |

27. The details of work done in laying out the coupes for exploitation in the coming season with cost as compared with last year is given in the following statement:—

| Range: | Number of Blocks. | Number of Coupes actually laid out. | Total area of Coupes. | Defined by | | Cost. | Average Cost. | |
|---|---|---|---|---|---|---|---|---|
| | | | | Cairns. | Stones. | | Per Coupe. | Per Acre. |
| *East Tha'na.* | | | | | | Rs. a. p. | Rs. a. p. | Rs. a. p. |
| Kalyán ... ... ... ... | 16 | 16 | 674¾ | 43 | 1,042 | 84 0 6 | 5 4 0 | 0 1 11 |
| Bhiwndi ... ... ... | 20 | 20 | 963¼ | 23 | 1,392 | 82 8 0 | 4 2 0 | 0 1 4 |
| Murbád ... ... ... ... | 20 | 15 | 821¾ | 46 | 1,590 | 86 14 0 | 5 12 8 | 0 1 8 |
| Sháhápúr ... ... ... | 53 | 49 | 3,079¼ | 196 | 4,443 | 264 5 0 | 5 6 0 | 0 1 4 |
| Khardi ... ... ... | | | | | | | | |
| Mokháda ... ... .. | 12 | 11 | 665¼ | 46 | 996 | 58 4 3 | 5 4 9 | 0 1 5 |
| Vada ... ... ... ... | 34 | 34 | 1,897 | 124 | 3,228 | 184 11 9 | 5 6 8 | 0 1 7 |
| Total ... | 155 | 145 | 8,101½ | 478 | 12,691 | 760 11 6 | 5 3 11 | 0 1 6 |
| *West Tha'na.* | | | | | | | | |
| Sálsette... ... ... ... | 11 | 11 | 438 | 35 | 860 | 54 8 6 | 4 15 6 | 0 1 11 |
| Bassein ... ... ... ... | 23 | 23 | 1,157 | 20 | 2,331 | 116 9 9 | 5 1 1 | 0 1 7 |
| Mahim ... ... ... ... | 35 | 35 | 1,767¾ | 112 | 3,041 | 163 13 6 | 4 11 11 | 0 1 6 |
| Dahánu... ... ... ... | 42 | 42 | 2,454¾ | 216 | 3,949 | 191 6 0 | 4 8 5 | 0 1 3 |
| Umbargaon ... ... ... | 19 | 19 | 997¾ | 65 | 1,617 | 89 12 6 | 4 11 7 | 0 1 5 |
| Total ... | 130 | 130 | 6,815¼ | 448 | 11,798 | 616 2 3 | 5 3 2 | 0 1 7 |
| Grand Total, 1894-95 ... | 285 | 275 | 14,916¾ | 926 | 24,489 | 1,376 13 9 | 5 0 1 | 0 1 6 |
| Total during 1893-94 ... | 284 | 273 | 14,380¼ | 782 | 22,340 | 1,227 12 3 | 4 8 0 | 0 1 4 |

## II.—WORKING OF THE YEAR.

### (*a*).—Communications and Buildings.

28. The expenditure under this head incurred departmentally was Rs. 9,387-0-11 during the year. Details of the work for which this amount was spent are to be found in Form No. 51.

29. The following is a list of works carried out during the year through the agency of the Public Works Department:—

| No. | Name of Work. | Amount expended. |
|---|---|---|
| | Original Works. | Rs. a. p. |
| | *East Thána.* | |
| 1 | Providing ceiling and railing to the Range Forest Office at Bhiwndi ... ... ... ... ... | 83 15 11 |
| 2 | Additions and alterations to the Forest Depôt-house at Wángni | 61 12 6 |
| | *West Thána.* | |
| 3 | Constructing (partially) Forest Depôt-house at Gholwad ... | 539 6 1 |
| | Total ... | 685 2 6 |

| No. | Name of Work. | Amount expended. |
|---|---|---|
| | REPAIRS. | Rs. a. p. |
| | *East Thána.* | |
| 1 | Repairs to the Forest Office at Kalyán ... ... | 13 5 7 |
| 2 | Do. do. at Murbád ... ... | 15 7 6 |
| 3 | Do. do. at Khardi ... ... | 67 14 0 |
| 4 | Do. do. at Váda ... ... ... | 18 0 0 |
| 5 | Do. do. at Bhiwndi ... ... | 17 13 2 |
| 6 | Do. Forest Depôt-house at A'tgaon ... ... | 11 15 9 |
| 7 | Do. do. at Kására ... ... | 11 4 0 |
| 8 | Do. do. at Vásind ... ... | 11 15 7 |
| 9 | Do. do. at Vángni ... ... | 12 12 9 |
| | *West Thána.* | |
| 10 | Repairs to the Forest Office at Bassein ... ... | 21 7 7 |
| 11 | Do. do. at Sálsette (Thána) ... ... | 14 7 6 |
| 12 | Do. do. at Máhim ... ... | 25 10 0 |
| 13 | Do. Forest Depôt-house at Manor ... ... | 20 1 2 |
| 14 | Do. do. at Sávda ... ... | 12 14 0 |
| 15 | Do. do. at Pálghar ... ... | 7 1 2 |
| 16 | Do. do. at Sanján ... ... | 10 11 10 |
| 17 | Do. do. at Wangaon ... ... | 12 11 0 |
| | Total ... | 990 14 1 |
| | *Panch Maháls.* | |
| 1 | Repairs to the Forest Office at Dohad ... ... ... | 15 9 0 |
| | Grand Total ... | 1,006 7 1 |

(*b*).—PROTECTION OF FORESTS FROM INJURY.

(1).—*General Protection and Breaches of Forest Law.*

(*a*).—*General Protection.*

30. There has been no change in the scale of Protective Establishment during the year.

31. That the protective establishment is short-handed to deal with the multifarious duties required of them has been repeatedly pointed out, and to enlarge on it further would be useless.

(*b*).—*Breaches of Forest Law.*

32. The following table gives the cases tried by Magistrates during 1893-94 and the present year:—

| No. | Division. | 1893-94. | | 1894-95. | | Percentage of failures. | |
|---|---|---|---|---|---|---|---|
| | | Prosecutions. | Acquittals. | Prosecutions. | Acquittals. | 1893-94. | 1894-95. |
| 1 | East Thána ... ... | 152 | 55 | 180 | 65 | 36·1 | 36·1 |
| 2 | West Thána ... ... | 62 | 31 | 49 | 18 | 50 | 36·7 |
| 3 | Surat ... ... ... | 2 | ... | 12 | 1 | ... | 8·3 |
| 4 | Panch Maháls ... ... | 14 | 3 | 54 | 10 | 15·4 | 19·9 |
| | Total ... | 230 | 89 | 295 | 94 | 38·7 | 31·8 |

33. Notwithstanding that the number of offences prosecuted has risen nearly 20 per cent., the number of failures has decreased 7 per cent., which is satisfactory, though, as was pointed out last year, in dealing with such small totals too much importance should not be attached to percentages.

34. The nature of the above 389 offences was as follows :—

| No. | Division. | Offences relating to the misappropriation of | | | (d) Other Offences. | Total. |
|---|---|---|---|---|---|---|
| | | (a) Timber. | (b) Firewood. | (c) Minor Forest Produce. | | |
| 1 | East Thána ... ... ... ... | 90 | 48 | 18 | 24 | 180 |
| 2 | West Thána ... ... ... | 37 | 11 | 13 | 6 | 67 |
| 3 | Surat ... ... ... ... | 8 | 1 | ... | 4 | 13 |
| 4 | Panch Mahálś ... ... ... | 49 | 3 | 10 | 2 | 64 |
| | Total ... | 184 | 63 | 41 | 36 | 324 |

35. 1,080 cases were reported as undetected and were classed as follows :—

| No. | Division. | Injury to Forests by Fire. | | Unauthorized Felling or Appropriation of Wood and Minor Forest Produce. | | Grazing without Permission or in Tracts in which Grazing is prohibited. | | Other Offences. | | Total. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1893-94. | 1894-95. | 1893-94. | 1894-95. | 1893-94. | 1894-95. | 1893-94. | 1894-95. | 1893-94. | 1894-95. |
| 1 | East Thána ... | 234 | 234 | 460 | 419 | ... | ... | ... | 10 | 694 | 663 |
| 2 | West Thána ... | 126 | 134 | 119 | 114 | ... | ... | 4 | 3 | 249 | 251 |
| 3 | Surat ... ... | ... | 59 | ... | 1 | ... | ... | ... | ... | ... | 60 |
| 4 | Panch Mahálś ... | ... | 75 | 27 | 31 | ... | ... | ... | ... | 27 | 106 |
| | Total ... | 360 | 502 | 606 | 565 | ... | ... | 4 | 13 | 970 | 1,080 |

36. In the Thána divisions, where there is still a considerable area of land awaiting settlement, offences are brought to the notice of the Revenue officer, who disposes of them under Section 43, Land Revenue Code. The offences thus disposed of during the year as compared with 1893-94 were as follows :—

| Number. | Division. | 1893-94. | | | | | 1894-95. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Number of cases. | Value of Forest Produce. | Acquittals. | Convictions. | Amount of Fines. | Number of cases. | Value of Forest Produce. | Acquittals. | Convictions. | Amount of Fines. |
| | | | Rs. a. p. | | | Rs. a. p. | | Rs. a. p. | | | Rs. a. p. |
| 1 | East Thána ... ... | 10 | 50 3 0 | ... | 10 | 50 0 6 | 13 | 118 14 3 | ... | 13 | 122 8 6 |
| 2 | West Thána ... | 11 | 432 8 0 | ... | 11 | 598 5 0 | 12 | 197 13 0 | ... | 12 | 200 13 0 |
| | Total ... | 21 | 482 11 0 | ... | 21 | 648 5 6 | 25 | 316 11 3 | ... | 25 | 323 5 6 |

37. The number of cases prosecuted as compared with that of cases compounded under Section 67 during the year 1893-94 and 1894-95, together with details of the nature of cases compounded during the latter year, are as follows :—

| No. | Division. | Taken into Court. | | Compounded under Section 67 of the Forest Act. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1893-94. | 1894-95. | | | | | | |
| | | | | | Offences relating to the misappropriation of | | | | | | |
| | | 1893-94. | 1894-95. | | (a) Timber. | (b) Fire-wood. | (c) Minor Forest Produce. | (d) Other offences. | Total. | Amount of Compensation. | |
| | | | | | | | | | Rs. | Rs. a. p. | |
| 1 | East Thána ... | 212 | 217 | 87 | 60 | 55 | 15 | 15 | 145 | 1,355 1 9 | |
| 2 | West Thána ... | 84 | 73 | 77 | 71 | 3 | 58 | 3 | 135 | 492 15 3 | Rs. 267-7-0 remained to be recovered at the close of the year. |
| 3 | Surat ... ... | 2 | 14 | 7 | 7 | 4 | 2 | 1 | 14 | 23 13 0 | |
| 4 | Panch Mahals ... | 18 | 69 | 157 | 123 | 17 | 7 | 10 | 157 | 219 9 9 | |
| | Total ... | 316 | 373 | 328 | 261 | 79 | 82 | 29 | 451 | 2,091 7 9 | |

38. In the following statement the 451 cases compounded during the year are classified according to the amount of compensation accepted in each case as directed in Government Resolution No. 1899, dated 13th March 1891 :—

| No. | Division. | Number of Cases in which Compensation was fixed at Rupees. | | | | | | | | | | | | | | | | | | | | | | | | | | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 31 | 44 | 50 | 53 | 101 | |
| 1 | East Thána ... | 88 | 14 | 7 | 6 | 13 | 1 | 1 | ... | 1 | 3 | 1 | 1 | 2 | 1 | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 | 1 | ... | *1 | *1 | 145 |
| 2 | West Thána ... | 64 | 28 | 17 | 6 | 2 | 2 | 1 | 1 | 1 | ... | ... | 2 | 1 | ... | 1 | ... | ... | 1 | ... | 2 | 3 | ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | 135 |
| 3 | Surat ... ... | 3 | 2 | 3 | 4 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14 |
| 4 | Panch Mahals ... | 101 | 27 | 12 | 7 | 3 | 2 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 157 |
| | Total ... | 256 | 71 | 39 | 23 | 19 | 5 | 3 | 3 | 2 | 3 | 1 | 3 | 3 | 1 | 1 | 1 | ... | 1 | ... | 4 | 4 | ... | ... | 1 | ... | ... | 1 | 1 | 3 | 1 | 1 | 451 |

* The two cases in which compensation was above the prescribed limit represent several offenders.

39. The information required by Government Resolution No. 1899 of 15th March 1891 is furnished in the following statement :—

| No. | Division. | Number of complaints disposed of under Section 67. | Number of cases in which Compensation has been accepted. | Number of Appeals against the proceedings. | Manner in which the appeals have been disposed of. | Remarks. |
|---|---|---|---|---|---|---|
| 1 | East Thána ... | 145 | 145 | ... | ... | Besides these, in 10 cases offenders were let off with warning. |
| 2 | West Thána ... | 135 | 135 | ... | ... | |
| 3 | Surat ... ... | 14 | 14 | ... | ... | |
| 4 | Panch Mahals ... | 157 | 457 | ... | ... | |
| | Total ... | 451 | 451 | ... | ... | |

*(b) (2)—Protection from Fire.*

40. The results of the year's fire protection as compared with those of 1893-94 are as follows:—

| No. | Division. | Forest Area placed under protection against Fire. | | Average burned. | | Percentage burned. | |
|---|---|---|---|---|---|---|---|
| | | 1893-94. | 1894-95. | 1893-94. | 1894-95. | 1893-94. | 1894-95. |
| | | Acres. | Acres. | Acres. | Acres. | Acres. | Acres. |
| 1 | East Thána ... | 451,907 | 440,207 | 17,700 | 26,448 | 3·9 | 6 |
| 2 | West Thána ... | 247,344 | 323,021 | 6,680 | 3,706 | 2·7 | 1·1 |
| 3 | Surat ... ... | 478,237 | 478,873 | 443,747 | 448,614 | 92·8 | 93·6 |
| 4 | Panch Mahals ... | 217,530 | 213,530 | 17,276 | 20,311 | 7·9 | 9·5 |
| | Total ... | 1,391,018 | 1,455,631 | 485,403 | 499,079 | 34·9 | 34·2 |

## Thána.

41. In West Thána there has been an immense improvement in the percentage of area burnt over, but in East Thána this percentage is even higher than last year. Although the Divisional Forest Officer claims that the increased area shown as burnt is due to correcter reporting, yet after making all allowances it is clear that there has been no improvement. This question of fire protection is a most grave one in Thána. The "coupe" system, as it is popularly called under which the Thána Forests are being worked, is in most ways a complete success. The people are furnished with ráb-material and a livelihood, and the revenue remains at a high figure; moreover, the coppice shoots from stools felled promise a fair crop for the next revolution, but it cannot be overlooked that there is a great dearth—too often a total absence—of seedlings to replace the present stools when their reproductive power shall be exhausted. There can be no doubt that mainly, if not entirely, this is due to forest fires. The reserves, especially the areas which have come under the axe during the past 10 years, were fire-traced as usual, but in most instances the only use these traces served was to prevent the fire spreading beyond the limits of the reserves. The fact is, fires only very exeptionally enter the forests from outside, they are almost always kindled inside. In East Thána out of 131 fires no less than 123 commenced inside the reserves. These figures are suggestive, but still more so is the fact that the whole of the Tánsa catchment area was burnt from end to end by fires which invariably commenced within it although there is no one living there. The system of reporting each fire by post-card to the Collector as initiated by Mr. Sinclair has been continued with the modification that the post-card is sent to the Assistant Collector of the sub-division instead of to the Collector. All the Assistant Collectors appealed to state that the system is a useful one, but I confess I cannot concur. In the first year possibly the village officers were startled at being asked about fires, but as soon as they realized that that was all, the system, I fear, 'degenerated into' routine, and has become absolutely harmful as giving an idea that something real is being done, whereas it is not so. The Forest Department have done their best and, I think, I may confidently assert that an immense improvement has been effected; but it would seem that we have reached the best possible which is achievable by us under present conditions, and I have no hesitation in saying it is very far short of what must be achieved if the present working-plans are to be anything more than a trap. The vitality of the present stools may last out two or even three revolutions, but unless seedlings are produced to replace them as they fail, the ultimate result must be denudation. The present subordinate establishment is admittedly short-handed and it is possible that an improvement may be obtained by supplementing it by a temporary fire protection establishment. It is proposed to try the experiment this year, but I cannot conscientiously state that I have any confidence in its success. Under existing orders the people under one excuse or another have the right to wander unchallenged where they will and, under these conditions, prevention becomes an impossibility with any establishment that we should be justified in employing. I am aware that

it has been urged that forests are too often fired on purpose as a protest against the curtailment of privileges in them, but I confess I cannot believe this. The larger proportion of fires, I think, are, no doubt, purposely started, but the object is either to destroy the cover for wild animals which springs up and continues for 4 or 5 years after a coupe has been made, or in connection with shikár. I am in hopes of inducing the Collector to withdraw all gun licenses within a certain area round every fire that occurs, and this may have some effect; but I fear that unless Government enforce communal responsibility, no real improvement can be hoped for much beyond the point which we have reached. And even this communal responsibility must be one that really touches all the members of the village. Withdrawing the right of grazing, even if it could be enforced, does not touch the Thákur or Kátkari who fires the forests to drive out a sounder of pig to his Náik who waits for them with his matchlock.

## Surat.

42. In the Dángs practically every acre was burnt over, and until forest reserves are placed on a firmer footing, it is absolutely hopeless to fight against this state of affairs which is and has been the normal one in the Dángs for very many years. Until the demarcation has been given full effect to I can hold out little hope of improvement. The executive establishment for some 800 square miles is about 25 men all told. An effort has been made during the last 2 years to protect one or two small areas, of a few thousand acres in all, as an object lesson, by giving turbans to the local Náiks and Patels when fire has been kept out and and has been fairly successful.

43. In Surat proper the forests of the Mándvi Range, which are similar to those in the Dángs, are alone liable to be burnt. These, notwithstanding the figures annually reported, have undoubtedly been almost completely overrun by fire year after year. The areas burnt have been notoriously under-estimated, even last year when special attention was given to this matter the area was only given as 11,000 acres. During the past season Mr. Wallinger gave his special attention to the work of fire protection. The Mándvi forests consist of (1) a large block at the east end of the range, comprising the whole lands of some 12 deserted villages, which is bounded on two sides by Gáikwári territory, and of (2) a number of smaller reserves scattered over the rest of the range. Amongst these smaller reserves at distances of 12 miles or so apart Forest Posts have been built and, at the commencement of the season, a 'Nagára' or large drum was hung up at each of these posts. The arrangement proved most successful. In one case, which came under my observation within half an hour of the beating of the drum, the Divisional Forest Officer, the Assistant Collector, Mr. Wood, I. C. S., and some 40 villagers were at the scene of the fire which was about three miles off, and the fire was got under almost at once. No such system, however, was possible in the large block, which has been annually burnt by fires crossing over the Gáikwári border. Here a fire trace 40 feet wide was cleared of every living thing and was then kept clear of dead leaves, &c., by patrols entertained for the purpose. This trace was 12 miles long and, when I visited it early in March, I found a fire had just reached it from Gáikwári territory but had been successfully stopped. This was evidently the second fire which had traversed the Gáikwári area, the second feeding on the dead leaves which had fallen and the grass and bamboos which had died since the occurrence of the first fire. Unfortunately it is difficult to get labour and it was found impossible to complete the trace along the whole frontier, with the result that though fire after fire was kept back, yet in May three fires got into the reserve over the untraced portion, and these three fires alone are responsible for no less than 10,500 of the total of 16,500 acres burnt over in this Range during the year. The fact is that this reserve, which has been practically unworked for many years, has become so choked with heavy grass that it was impossible to stop a fire which had once got a hold. It is hoped that the system of fire lines for this reserve will be completed this season. Mr. Wallinger is deserving of sympathy for the unfavourable result I am obliged to record, for he worked very hard and it was only I believe the impossibility of completing the system of traces which prevented his being almost completely successful.

44. I cannot pass on without recording my thanks to Mr. Wood, I.C.S., for the hearty moral support and even personal help in extinguishing fires which he gave to Mr. Wallinger.

## Panch Maha'ls.

45. The figures in this division show a higher percentage of area burnt over than last year, and Mr. Stewart records that he considers even this area to be under-estimated. The Divisional Forest Officer attributes the poor results of fire protection to want of funds for fire tracing work and the entertainment of special patrols. I think, however, this cannot be the only cause, for barely one-fourth of the sum provided was actually spent. The fact is, the demarcation and settlement of the forests of the division have only lately been completed, and organization only lately taken in hand. The forests are on flat ground, and protection should not be difficult but can only be successful if methodically undertaken. Mr. Wallinger, who has taken charge of the division, will no doubt make a commencement in the coming season. I would note, however, that the support of the Magistrates is necessary for success. During the season two convictions were obtained in which fines of Re. 1 were inflicted by the Magistrate.

### (*b*) (*3*).—*Regulation of Grazing and Protection from Cattle.*

46. The following statement gives details of cattle impounded during the year under report :—

| No. | Division. | From open Forests. | | From closed Forests. | | Total. | |
|---|---|---|---|---|---|---|---|
| | | 1893-94. | 1894-95. | 1893-94. | 1894-95. | 1893-94. | 1894-95. |
| 1 | East Thána ... ... | 230 | 154 | 2,086 | 1,922 | 2,316 | 2,076 |
| 2 | West Thána ... ... | 161 | 351 | 1,280 | 1,750 | 1,441 | 2,101 |
| 3 | Surat ... ... ... | 1,070 | 1,055 | 1,869 | 1,359 | 2,939 | 2,414 |
| 4 | Panch Maháls ... ... | 661 | 1,111 | 1,980 | 2,837 | 2,641 | 3,948 |
| | Total ... | 2,122 | 2,671 | 7,215 | 7,868 | 9,337 | 10,539 |

It will be seen that the numbers differ but slightly from those of last year.

47. The grazing regulations were in force in the Panch Maháls and Surat (exclusive of the Dángs), but only in certain selected ranges of the 2 Thána divisions. The number of cattle impounded in Thána bears no proportion to the number which were allowed to graze illicitly in coupes, as I can bear witness from the damage which came under my notice during my tour; but pounds are so far apart and the establishment so short-handed, that no doubt the impounding of trespassing cattle, at all times a difficult task, is shirked.

*Fencing.*

48. No new fencing was undertaken during the year except in Surat, where the Vejalpor nursery was fenced and some enclosures for stacking bamboos made at the Wághai Depôt in the Dángs. A few necessary repairs were executed in all divisions. The total expenditure amounted to :—

| | Rs. | a. | p. |
|---|---|---|---|
| West Thána ... ... ... | 152 | 3 | 0 |
| East Thána ... ... ... | 94 | 0 | 0 |
| Surat ... ... ... | 707 | 0 | 6 |
| Panch Maháls ... ... ... | 21 | 15 | 4 |
| Total ... | 975 | 2 | 10 |

*Civil Suits.*

49. The appeal to the High Court by the Isáfatdár of A'mgaon, referred to in para. 68 of last year's report, was decided in favour of Government, though not for the full amount claimed, as large deductions were allowed to the Isáfatdár as working expenses and cost of protection.

*Criminal Cases.*

50. A (substitute) forest guard was convicted with striking a forest offender, who ran away, on the back of the head and causing his death. He was sentenced to rigorous imprisonment for five years.

51. A round guard in Surat division was found guilty of fraud in connection with a free grant of wood, but was acquitted on appeal to the Session Judge. He was, however, dismissed after departmental enquiry.

52. The Forest guards Gorav Bhika and Dewra Sukaria of the Dángs establishment were convicted by the Assistant Political Agent, Khándesh, of taking bribes. They were dismissed and declared ineligible for re-employment under Government in any capacity.

(*c*).--IMPROVEMENT OF FOREST GROWTH.

*Natural Reproduction.*

53. Natural reproduction is reported by all Divisional Forest Officers as having been fair during the year; but this must be merely taken to mean that it was up to the average and was not interfered with by scanty rainfall, &c. From observations recorded by almost all Divisional Forest Officers, and from my personal observations, I can record that natural reproduction is nothing like what it should be owing to the annual fires. In the Panch Mahál the seed reproduction of teak is normally magnificent. I have never seen anything like it even in Kánara, but the young seedlings are scorched year after year and either killed outright or where they escape are hopelessly ruined. I have seen as many as 3 dead sticks standing up from one stool representing three consecutive annual efforts of the stool to become a tree. In the Dángs Mr. Wallinger reports that seedlings are totally wanting, and from the record of these forests this could only be expected, and Mándvi, as I can testify, is nearly as bad. In both the Thána divisions the coppice reproduction in the coupes is very generally satisfactory, but as I have recorded elsewhere there are but few, if any, seedlings coming on to replace the stools when their vitality shall be exhausted, and again the principal, if not only, cause is fire. Immediately after the rains the coupes are carpeted with seedlings, but all but a very small—an ominously small—proportion are destroyed by fire before April.

(*2*).—*Artificial Reproduction.*

54. Artificial reproduction, so far as regular plantations go, have little place in the Forestry of the Northern Circle.

55. In the Thána divisions an attempt was made to assist nature in the coupes by broad-casting and filling in blanks, but the conditions which handicap natural reproduction are still more fatal to these cultural operations.

56. In Surat, Tithál plantation has given fair results and the experiment of planting out Casuarina, from a nursery, on the sea-shore above high water mark is being continued. The Vejalpor nursery was kept up and supplied a large number of transplants of Casuarina and of teak, which latter were planted out in the coupes with fair success, and other small nurseries were started at Wághai, Mándvi, Delwáda and Gandeva.

57. In the Panch Mahál some 125 acres in several places were ploughed and sown with bíbhul. It is too early to brand these attempts as failures, but as usual with these plantations made in the open the seedlings disappeared in the hot weather. An old plantation at Wávdi although wire-fenced and fire-traced was burnt over.

(*3*).—*Early Thinnings.*

58. No such operations were carried out in this Circle.

(4).—*Other Operations for the improvement of the growing Stock.*

59. In West Thána *Bindukli* (*Loranthus longiflora*) was cleared from standards in the coupes by guards and hired labour at a cost of Rs. 11.

60. Prickly pear to a considerable extent was taken out of the bábhul reserves along the Railway at a cost of Rs. 75.

61. In both East and West Thána creeper-cutting was carried on by guards.

(5).—*Experiments.*

62. There are no experiments to be recorded.

(*d*).—Exploitation of Major Forest Produce.

63. There is little to add to the details recorded last year (paragraph 84).

64. The system of employing Nákedárs in the coupes to issue passes to bandars and Railway stations at the expense of contractors and of stationing Government Nákedárs at bandars and Railway stations to issue export passes continues to work smoothly.

65. Jawhár, Dharampur and Baroda have all sold large areas of forests on foot during the past season and in 1893-94. All this wood comes down to the same bandars as that of West Thána coupes, and it is wonderful how the demand for Government wood continues unabated.

(*e*).—Extraction and Transport of Major Forest Produce by Land and Water.

66. None of the teak timber from the Thána coupes finds its way to Bombay. That from West Thána is exported from the various bandars by sea to North Gujarát and Káthiáwár, while that from East Thána is exported by rail to the Dekkhan and Central Provinces. All the firewood of both divisions on the other hand goes to Bombay from West Thána by sea and from East Thána mostly by rail. In the case of those coupes of East Thána which are too far from the Railway to make the export of firewood profitable, it is converted into charcoal and sent to Bombay in that form.

67. The teak put on the market in the Panch Maháls when not sold locally is exported to the large towns on the Railway (Ahmedabad, Surat, Broach, &c.) as rafters for roofing.

68. The Dáng timber goes partly above ghâts and partly to the coast. As explained elsewhere, the export above ghâts from the Upper Dángs failed completely. The Lower Dáng timber is brought out by contractors on the share system to a Government depôt at Wágrech, where it is sold by auction, periodically, in lots according to the demand. The Wágrech Depôt is on the Ambika River at its junction with the sea, and as that river has its rise in the Dángs, if a system of floating the timber down could be substituted for the present costly cartage, a very large profit would result. Such a scheme is now under consideration.

69. The Mándvi Forests are not at present being regularly worked, but any timber put on the market there is almost invariably floated down to Surat by the purchasers. There are large private timber depôts at Surat and Balsár.

(*f*).—Exploitation of Minor Forest Produce.

(1).—*Extraction of Fodder.*

70. The grass of reserves was sold standing where there was an export demand, but by far the major portion was taken by the people (especially in Thána) without payment and mainly used for burning on their ráb plots.

(2).—*Grazing.*

71. The details of cattle, &c., grazed free and on payment of fee are given in Form 55; but the figures for Thána, where the grazing regulations are not yet in force, are of little value and are mere estimates.

(3).—*Miscellaneous Produce.*

72. The usual farms of minor produce were sold during the year and yielded in all Rs. 9,050.